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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,905	12/15/2000	James A. Dirksen	207617	2436

29050 7590 12/31/2001

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EXAMINER
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PEREZ RAMOS, VANESSA

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 12/31/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-4

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/737,905	DIRKSEN ET AL.
	Examiner Vanessa Perez-Ramos	Art Unit 1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-16 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_

## DETAILED ACTION

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al. (U.S. 5,664,990) in view of Kaneko et al. (U.S. 5,114,881).

In regard to claims 1-16, Adams discloses a method of polishing or planarizing a substrate having a metal layer therein (col. 2, lines 5-6), wherein the metal can be titanium, tungsten, copper and many others (col. 2, lines 8-9), with a composition comprising a metal oxide abrasive, wherein the metal oxide abrasive can be silica, ceria and many others (col. 2, lines 16-18) and a liquid carrier (col. 2, lines 18-19), wherein the composition has a pH of about 5 or less, which reads on Applicant's "7 or less" (col. 2, lines 20-21).

Adams is silent about the "total surface hydroxyl group density" of the metal oxide abrasive.

Kaneko discloses that silica has a small density of surface hydroxyl groups, usually from 0.1 to 4 groups (col. 2, lines 50-62). Furthermore, Kaneko discloses that the use of this silica powder helps prevent fractures and cracking in some processes (col. 1, lines 54-58).

It is the Examiner's position that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Adams by utilizing a metal oxide abrasive with a total surface hydroxyl group density of less than 3 hydroxyl groups per nm<sup>2</sup>, as per Kaneko, because

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the use of fine silica with a low total surface hydroxyl group density helps prevent cracking and fractures, which is extremely desirable in the art.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Perez-Ramos whose telephone number is 703-306-5510. The examiner can normally be reached on Mon-Thurs 7:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on 703-308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5665.

Vanessa Perez-Ramos  
Examiner  
Art Unit 1765

VPR  
December 17, 2001

*Felisa Hiteshew*  
FELISA HITESHEW  
PRIMARY EXAMINER